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MAY 27 2004
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Applicant Jeffrey C. Herald

Title "Flexible Travel Bag with Integrated Support to Protect Bag from Wear"

Specification for a Letters Patent

BACKGROUND OF THE INVENTION

Field

[0001] This invention is generally concerned with luggage materials, configurations and designs, and is specifically concerned with travel bags having specialized support integrated therewith to provide a strong base which is resistant to wear and damage occasioned by use of said bag.

Prior Art

[0002] The frequent traveler is well aware of need for high quality travel bags. Transit systems tend to be quite taxing on baggage of low quality. Bags get stuck or snagged on equipment such as doors, escalators, conveyors, carts, handrails, armrests, among others. As travel bags tend to be heavy when loaded, they may be equipped with wheels to facilitate transport across smooth floors. Wheels are typically mounted into the bottom of such bags. An additional feature may include a handle. Handles are sometimes retractable into the bag such that the bag occupies a smaller space and allows for convenient storage.

[0003] Some bags are designed for very heavy loads. Commonly known as "duffel" bags, a flexible material forms an enclosure into which objects may be packed. For example, a bag designed to carry sporting equipment may be made of strong canvas and reinforced at the seams with webbing or alternative durable materials. These bags may be particularly suited for carrying large and bulky objects which cause increased wear on the bags.

[0004] An example of a travel bag suited for sporting equipment is taught by **Mr. Kjose** in **U.S. Patent # 4,657,135**. The bag is designed to carry a second containment vessel of similar shape. It is

shown with wheels 70 attached about its bottom at various locations. Additionally, it has a zip opening 21 and a handle 80. With the wheels distributed as shown, i.e. with a long wheelbase, the bag tends to be difficult to steer. In addition, the lower corners of the bag tend to be exposed. They may be engaged by or come into contact with many objects which may cause wear to them.

[0005] An enclosure for sporting equipment is described in detail in **U.S. Patent # 4,953,768** by inventor **Muse**. The enclosure is particularly designed to protect its contents against the elements and specifically rain. The cover may similarly be equipped with a handle which cooperates with the cover to which it is attached.

[0006] **Mr. Hauer** of Washington teaches a wheeled bag in the form of a cart with a handle and accessory holder in **U.S. Patent # 4,411,465.** The two wheels are spread such that they are broader than the bag is in order to resist tipping in a lateral direction.

[0007] Finally, **Mr. Dunn** of Santa Ana, California teaches a novel bag in which a golf club set is to be carried. **U.S. patent # 5,265,894** shows a bag which includes wheels 32 and a handle 25. Of particular interest is the bottom member which is a rigid element. The sides of the bag are fastened to the bottom member which supports the wheels.

[0008] Perhaps the most sophisticated experts with regard to travel bags include airline personnel. Airline travelers will certainly recall that flight attendants and pilots often tote a wheeled bag through airport and hotel lobbies. The bag is typically made of durable canvas or similar cloth material. With a retractable handle, the bag is pulled behind the user while the bottom is supported on two wheels in contact with the floor. The wheels are preferably quite small and are sometimes built into the bag at wheel wells which are riveted to the canvas bottom. These bags are conveniently designed to fit the compartments of airplanes. They are durable in design, but tend to support a load of only a few tens of pounds. As such, the material used to form the bags is generally only mildly resistant to high friction loads. The corners of these bags are generally made of soft materials which tends to get caught on various objects including sharp metallic objects such as those of which a conveyor might be comprised. The metallic objects tend to tear and destroy the bags. Additionally, the wheels are sometimes subject to very high impact force and may easily break away from the canvas bag to which they are attached. These travel bags may be dragged up or down stairs. Designers have included ribs made of plastic which run in a longitudinal direction down the back of the bag. These ribs may help allow the bag to be dragged over a bumpy surface such as stairs. However, the ribs are usually attached to the soft material of the bag by rivets or adhesives. Objects may operate to tear the ribs from the bag when they engage the ends of the ribs.

[0009] Most travel luggage can be classified either "soft" luggage or "hard" luggage. Soft luggage is lightweight and more easily made compact for storage; while hard luggage tends to be more bulky. However, hard luggage is quite strong and may stand up to extreme conditions which act to wear or damage the luggage. Soft luggage is more easily destroyed by conditions to which it may be exposed in normal use. It would be desirable to provide luggage which benefits from the advantages offered by each of these types of luggage, without having the problems associated with either.

[0010] Notwithstanding, new configurations have been discovered which provide novel designs and forms far travel bags, particularly travel bags subject to high wear and damage due to the heavy loads which they support. In contrast to the good and useful inventions mentioned, each having certain features that are no less than remarkable, the instant invention is concerned with providing a long lasting, wear resistant travel bag far heavy loads.

SUMMARY OF THE INVENTION

[0011] Comes now, Jeffrey C. Herald with an invention of a travel bag including combinations of materials and configurations arranged to provide a superior travel bag which is resistant to damage due to impact and friction forces incident thereon, yet is lightweight and easily made compact for storage.

[0012] A travel bag of the invention may be comprised of two primary elements. A first element is a strong, flexible material which forms an enclosure and the second element is a rigid material which forms a protective barrier and support. The elements are formed in shapes to cooperate together as mates. The two elements are affixed together in a fashion to realize a high utility travel bag having superior properties. The bag may be compactly stored as soft luggage, but is durable against damage as is hard luggage. The combination provides a specialized bag which is particularly useful for transporting large and heavy loads such as those associated with sporting equipment.

Objectives of the Invention

[0013] Accordingly, it is a primary object of the invention to provide a heavy duty travel bag.

[0014] It is an additional object to provide a travel bag which resists wear commonly occasioned by such bags.

[0015] It is an object to provide a travel bag which is easily made compact far storage.

[0016] It is an object to provide a bag with a strong base which supports integration of wheels thereon.

[0017] It is an object to provide a travel bag with extra support at regions subject to high friction, snag, tear and impact and other contact forces.

[0018] These objectives and others will be readily appreciated in view of the following examples of preferred embodiments. A better understanding can be had with reference to the detailed description of preferred embodiments and with reference to the appended drawings. These embodiments represent particular ways to realize the invention and are not inclusive of all ways possible. Therefore, there may exist many embodiments that do not deviate from the spirit and scope of this disclosure as set forth by the claims, but do not appear here as specific examples. It will be appreciated that a great plurality of alternate versions are possible.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

These and other features, aspects, and advantages of the present invention will become better understood with regard to the following description, appended claims and drawings where:

Figure 1 shows a travel bag of the invention in a perspective rear view;

Figure 2 shows a travel bag of the invention from a front view;

Figure 3 shows a travel bag of the invention in a storage position; and

Figure 4 shows details of an element of a travel bag which is a rigid member.

PREFERRED EMBODIMENTS OF THE INVENTION

[0019] In accordance with each of the preferred embodiments of the invention, there is provided a travel bag including a flexible enclosure element integrated with a rigid support to protect the bag from wear. It will be appreciated that each of the embodiments described is an apparatus and that the apparatus of one preferred embodiment may be different than the apparatus of another embodiment.

[0020] A travel bag of the invention is comprised of two primary elements. A first element is a flexible material which forms an enclosure and the second element is a rigid device which forms a protective barrier and support.

[0021] An enclosure is formed by proper arrangement of a durable, flexible material such as nylon, canvas, denim, polyesters or other suitable materials. Portions of material may be cut from cloth in patterns which can be sewn together. Seams and other regions subject to high stress may be reinforced and improved by supportive webbing materials. Strong rivets may be used to attach and affix webbing to the flexible material. In addition, webbing may be sewn to the flexible material. The enclosure typically has an opening which may be alternatively opened and closed with a zipper or other fastener. When the enclosure is loaded, it may take a certain shape due to the form and limits of the materials used to make the enclosure. A handle may be provided at an end or along a portion of a side of the bag. A handle so placed, suggests a "top" and "bottom" of a bag. The enclosure portion of a bag may therefore have: a bottom portion, a top portion, and side portions each made of flexible material. The bottom of the enclosure meets the sides to form a seam. Two sides and the bottom may be joined together and farm a corner. A lower quadrant of the flexible enclosure might include two corners, a portion of the enclosure bottom, and portions of the enclosure sides. Normal handling of the bag may cause the lower portion of the bag to be exposed to various forms of wear and contact forces such as impact forces and friction forces. Accordingly, the bottom quadrant of the bag is the focus of a specialized support element.

[0022] A rigid member shaped to cooperate in farm with the enclosure described above, and additionally shaped and designed to resist specific forces to which the element may be exposed, is provided. It may include wheel wells, protective corners, and reinforcement ribs all integrated as a together single piece. This rigid member may be formed of rugged material such as plastic or metal which are highly durable and resist wear and damage due to contact forces. High impact plastics may be particularly suitable. The rigid member takes a specialized shape. It has a convex side and a concave side. The concave side is shaped to receive therein, a quadrant or substantial portion thereof, the flexible enclosure; particularly a bottom quadrant thereof. A rigid member so designed can be fastened and affixed to a flexible enclosure described above. They may be fastened in a plurality of ways, however, a simple and effective way which is preferred is via rivets. Snaps, Velcro, adhesives or other fasteners may also work for same alternative versions. The convex side may support secondary elements which include: wheel wells, reinforcement ribs, ruggedized corners.

[0023] With reference to the drawing figures, a preferred embodiment is shown which represents the best made contemplated. An enclosure 1 is formed by sewing together various pieces or panels of material. The enclosure generally has a top portion 2, and a bottom portion 3. The sides of the bag generally form a cylindrical shape with axial symmetry. A rigid support member 4 is formed of

hard material in a shape substantially similar to a quadrant of the enclosure form. In particular, the rigid support member may have two corners 5. Reinforcing ribs 6 may be integrated into the single piece element to add strength thereto. The support member is preferably formed to accommodate wheels 7 near its bottom. A front view of a travel bag of the invention is shown in Figure 2. The bag 21 may be provided with handles 22 on either side of a zipper opening 24. Alternatively, or in addition, a handle 23 may be attached to the top of the bag. The bottom of the bag 25 may be of arbitrary shape but generally contains two corners 26. These corners are matingly received into corners S of the rigid support member shown in Figure 1.

[0024] A drawing in Figure 3 shows the same rigid support member 3 1, however, the flexible enclosure portion 32 of the bag has been pushed down into the space of the concave part of the rigid support member. In this way, a bag can be made quite compact for storage. The entire bag occupies a space less than the one quarter of its capacity. It is an important feature that a travel bag be provided which can realize benefits of soft luggage and hard luggage. The rigid member tends to be very durable and protect the soft enclosure like hard luggage, while the soft enclosure portion tends to be lightweight and pack away in a fashion comparable to soft luggage.

[0025] Figure 4 shows a rigid member 41 may be formed of a single piece of material which has been molded or formed into a best shape. The rigid support member generally has a main portion which may extend from the bottom of the enclosure, along a portion of the side, and terminates near the middle of the enclosure. This main portion may have a thickness which is preferably a fraction of an inch. It is generally flat however it may be curved at its sides 45 to form a slightly concave side and a convex side. The rigid member additionally has a bottom portion which meets the main portion to form a smooth and rounded or curved joint. The bottom extends away from the main portion at approximately a right angle. The bottom portion may similarly be formed in a slightly curved piece where the concavity is oriented upwardly. The rigid member also has side portions 47. The side portions meet the bottom and main portions to form a comer(s) 46. The portions together form a cavity into which a soft flexible enclosure will be well received. The shape may include reinforcement elements 42 such as ribs which run along longitudinal and lateral directions of the device. These ribs may be ridges of material which extend slightly above the surface. They provide additional strength against bending and flexing. They are particularly important when a bag is dragged over rough surfaces such as the edges of stairs or escalators. Additionally, wells 43 formed to receive wheels 48 therein and to support mounting hardware for the wheels may be provided.

[0026] It is important to draw attention to the corner 46. When a wheeled travel bag is pulled by a handle, the corners of the bag are subject to great probability of being damaged. They tend to come into contact with many obstacles and objects which may damage a soft bag. Previously, soft bags were reinforced against such contact by merely g an extra layer of material at the corners or by putting small corner guards perhaps made of a special rugged material. These types of protection help to alleviate the problem and extend the life of the bag, however, as the corner protectors stand alone and are not integrated with a rigid support system they often fail and eventually become separated from the bag to which they are sewn. The rigid support member described has great resistance against damage caused by contact forces incident at the corners 46. When the rigid member is made of high impact plastic; the corners may stand up to a vigorous beating while protecting the bottom quadrant of the bag from damage. The corners cannot be separated from the bag as they are integrated with the entire rigid member as a single piece of formed material. Great advantage is realized by forming the rigid member of a single piece. Reinforcement ribs, wheel wells, and coner protectors are integrated together in a single device. In this way, the individual elements cannot be separated from each other or from the bag to which they are attached as is common in bags of the art. In addition, a cost advantage is realized because these elements do not have to be independently formed and attached to the bag. A single step of forming a rigid member in the manner described provides a travel bag with strong protection at the wheel wells, corners and ribs. This is particularly important in view of the nature in which some travel bags are used. Travel bags for heavy loads are particularly advantaged by this arrangement. The travel bag described has some advantages associated with soft and hard luggage without the problems which otherwise accompanies those types of devices.

[0027] Although the present invention has been described in considerable detail with clear and concise language and with reference to certain preferred versions thereof including the best mode anticipated by the inventor, other versions are possible. Therefore, the spirit and scope of the appended claims should not be limited by the description of the preferred versions contained therein.